



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,841	02/02/2007	Edwin Nun	278280US0PCT	5826
22850 7590 03/24/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER CHOI, FRANK I				
ART UNIT 1616		PAPER NUMBER		
NOTIFICATION DATE 03/24/2009		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

### Office Action Summary

**Application No.**

10/551,841

**Applicant(s)**

NUN ET AL.

**Examiner**

FRANK I. CHOI

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/4/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14, 15 and 18-36 is/are rejected.
- 7) ☒ Claim(s) 16, 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). The Example in the Specification refers to Figures 1 and 2, however, no drawings appear to be in the IFW file.

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

- (I) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The Examiner notes that since the Specification refers to Figures 1 and 2, a brief description of the drawings section is required.

Claims 16 and 17 are objected to as being dependent on rejected claim 14.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (f) he did not himself invent the subject matter sought to be patented.

Claims 14, 15, 18-22, 26-30, 35 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 8-165208.

JP 8-165208 expressly disclose a spray composition containing 1% titanium dioxide having a mean particle diameter of 21 nm in ethanol which is used to mildewproof a plastic pipe material (Paragraphs 0020-0025).

The Examiner has duly considered the Applicant's arguments but deems them unpersuasive.

The applicant argues that the rejection does not apply to the new claims because Maekawa does not disclose or recognize the importance of selecting hydrophobic particles having an aspect ratio of greater than 1. However, the aspect ratio is an inherent property of a particle. The applicant has provided no evidence that the titanium dioxide particles indicated above lack an aspect ratio of greater than 1. The Applicant argues that a silver system inorganic

antimicrobial agent is not required by the invention. However, the rejected claims do the exclude the use of the same. Contrary to the Applicant's arguments, claim 35 does not exclude titanium dioxide.

Claims 14, 15, 19-25, 27, 30-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Keller et al. (US Pat. 2002/0016433).

Keller et al. expressly disclose coating of a glass plate with polytetrafluoroethylene powder having a particle size of 1 micron and specific BET surface area of 8.01 m<sup>2</sup>/g (manufacture:Aldrich) in poly isobutene and spirit, wherein the spirit is evaporated resulting in a coat that is no longer wetted by water and coating of wooden board with 6.37 g of Aerosil ® R812S dispersed in 900.9 g of spirit and 2.73 g of polyisobutene which is sprayed and after drying the coat is no longer wetted by water (paragraphs 0110-0116).

Aspect ratio and irregular fine structures are inherent properties of particles and in view of the surface area of the particles it is inherent that the particles used in the prior art do have irregular fine structures which would fall within the claimed range of 1 m to 1000 nm and elevations having aspect ratios of greater than 1. The method claims do not require that the particles be biocidal in of themselves and the inhibition of mold is based on the formation of lotus-effect ® structures on the surface of the substrate, as such, the prior art method inherently meets the claimed method when the particles are applied onto the substrate and the dispersant is removed.

Claims 35, 36 are rejected under 35 U.S.C. 102(a or b) as being anticipated by Nun et al.

Nun et al. discloses a self-cleaning Lotus-Effect® surface on Plexiglas® made up of hydrophobic nanoparticles having a diameter less than 500 nm (pages 679, 680, figure 3).

Aspect ratio and irregular fine structures are inherent properties of particles and in view of SEM image (Fig. 3), it is inherent that the particles used in the prior art do have irregular fine structures which would fall within the claimed range of 1 m to 1000 nm and elevations having aspect ratios of greater than 1.

Applicant cannot rely upon the foreign priority papers to overcome the 102(b) rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

With respect to the 102(a) rejection, since Nun et al. lists authors not identified as inventors herein, the same constitutes a different inventive entity.

Claim 35, 36 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter. See rejection over Nun et al. above.

Patankar (Langmuir (2004)), WO 01/19932A2, US Pat. 6,955,834, US Pat. 7,066,998 and US Pat. App. Pub. 2004/0081818 are cited herein as relevant but duplicative art.

### ***Conclusion***

A facsimile center has been established in Technology Center 1600. The hours of operation are Monday through Friday, 8:45 AM to 4:45 PM. The telecopier number for accessing the facsimile machine is 571-273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Choi whose telephone number is (571)272-0610. Examiner maintains a compressed schedule and may be reached Monday, Tuesday, Wednesday and Thursday, 6:00 am – 4:30 pm (EST).

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Johann R. Richter, can be reached at (571)272-0646. Additionally, Technology Center 1600's Receptionist and Customer Service can be reached at (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank Choi  
Patent Examiner  
Technology Center 1600  
March 20, 2009

Application/Control Number: 10/551,841

Page 6

Art Unit: 1616

/Johann R. Richter/

Supervisory Patent Examiner, Art Unit 1616